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TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

September 10, 2009

TO: Internal File

THRU: Dave Darby, Team Lead

FROM: Priscilla Burton, Environmental Scientist III/Soils. PWB by SRS

RE: New Sedimentation Overflow Pond, Canyon Fuel Company, LLC., SUFCO Mine, C/041/002-Task #3370

SUMMARY:

The application for a new sediment control overflow pond installation, 800 ft. downstream of the existing mine sediment pond was received on June 24, 2009. Response to deficiencies with review Task 3370 was received on August 27, 2009. The overflow pond will be constructed on USFS land under a special use permit (p. 1-10) and will add 2.3 acres to the mine site disturbed area (pg 1-11). The disturbed area includes several hundred feet of culvert burial where no topsoil salvage is noted.

The information provided is recommended for conditional approval, pending receipt of 'clean copies' of the amendment.

TECHNICAL ANALYSIS:

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

SOILS RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.21; 30 CFR 817.22; 30 CFR 817.200(c); 30 CFR 823; R645-301-220; R645-301-411.

Analysis:

Appendix 2-2 provides an Order III soil survey that was conducted in 1980 by Endangered Plant Studies, Inc. The Order III soil survey map, Plate 2-1, does not extend to the location of the overflow sediment pond, however, the Order III soil survey indicates that soil in the drainage upstream of the overflow sediment pond is Type T, loamy skeletal, mixed, frigid Calcixerollic Xerochrepts. Type T soil is a described in App. 2-2 and in Sec. 2.2.2.3 of the MRP. Soil Type T is found on very steep slopes (>60%) with rock outcrops comprising one third of the map unit. The vegetation type is pinyon/juniper. Both Type T soils are described as having a surface layer of 2 – 8 inches of coal and road debris on the surface.

Order III survey Map Unit R describes the soils in the drainage upstream from the proposed overflow pond disturbance. "This is a complex consisting of 50% of the soil described in Unit O, 25% of a shallow phase of the soil described in Unit N, 10% rock outcrop and 5% each of the soils described in Units C and H." These soils > 35% rock fragments in common, and a surface layer that is 12 – 25 inches thick with paralithic contact at 20 – 50 inches below the surface.

An Order I soil survey was conducted for the existing sediment pond location. Soil sample sites 24 and 20 described in Vol. 4, App. 2-2 represent either side of the drainage upstream approximately 900 ft. upstream from the overflow sediment pond location (Sec. 7.3.2.2). Sample site 24 was described as severely eroded 50% Type W soil (loamy, skeletal, mixed frigid Typic Xerorthent); 20% rock outcrop; 10% moderately deep Xerorthent and 10% shallow Xerorthent soil. Sample site 20 is described as 70% well drained soil of the Kilfoil series (clayey, skeletal, mixed, xeric, Mollic Haploxeralfs) and 10% shallow soils described as loamy- skeletal, mixed, frigid, shallow Lithic Xerorthents; and 15% rock outcrop. The site description for sample site 20 indicates on p. 33 that the surface 10 – 12 inches is sandy loam above a clay loam topsoil. On p. 35, the consultants report that 15 inches of topsoil could be salvaged and stored from areas represented by sample site 20.

Applying the available information to the overflow pond suggests that in general a minimum of 12 inches of soil could be salvaged from the site before disturbance. The salvaged soil will likely have a high percentage of stones and rock, which is highly desirable for the channel reclamation. Prior to disturbance, the Permittee will conduct a site specific soil survey (Sec. 2.2.2 p. 2-3). The overflow pond soil survey will be added to Appendix 2-2 (Sec. 2.2.2 p. 2-8). The information from the soil survey will determine topsoil salvage depth.

Plate 5-2Bv17 outlines several pre-SMCRA coal dumps in the vicinity of the proposed overflow pond and topsoil storage area.

Findings:

The information provided meets the requirements of the Utah Coal Rules.

OPERATION PLAN

TOPSOIL AND SUBSOIL

Regulatory Reference: 30 CFR Sec. 817.22; R645-301-230.

Analysis:

Topsoil Removal and Storage

Soil salvage operations are described for new surface operations in Sec. 2.3.1.1 of the MRP. The MRP states that the A & B horizons will be stockpiled together or separately and a third stockpile of boulders will be in an adjacent location. The stockpiles will be graded to a 3h:1v slope and seeded. There will be no boulder stockpile for the overflow pond, although there are many large boulders in the channel, there are none visible in the relatively level location of the pond. The by-pass culvert will be installed on a road graded above the channel. Boulders encountered during the installation of the by-pass culvert will be either pushed to the side and used during final reclamation of the site or fragmented for ease of handling. The channel reclamation will only be required in the vicinity of the overflow pond which is a very flat grad, less than 10 ft in 350 ft. The native rock in the salvaged soil will be used to provide channel roughness in this location (personal conversation with Mike Davis, 09/14/2009).

In Sec. 2.2.4 the Permittee states that outslopes of dams will be used as subsitute topsoil at final reclamation. During a site visit on September 3, 2009, Mike Davis explained that the

overflow pond dam will be constructed from a former road pad that was constructed in the early 1980's to clear mine waste from the mine access road outslopes, at the request of the USFS. In the last 20 years this pad has become well vegetated and may also provide a source of suitable substitute topsoil. The outslope of the pond will be used in reclamation of the overflow pond. As described in Sec. 5.4.2.2, p. 5-68A.

The overflow pond topography is shown on Plates 7-4A and 7-5A. The area to be affected appears to be approximately 1.5 acres. On page 2-17, the application states that the A and B horizon to a depth of 12 inches will be salvaged and separately stockpiled. The stockpile size is based upon an estimate of 12 inches of topsoil salvage over 1.14 acres for a total of 1,850 cu yds (Sec. 2.3.1.1, p. 18). The stockpile will occupy 0.141 acres (Sec. 7.4.2.1).

Topsoil will be temporarily stockpiled along the length of the bypass culvert installation. The stockpile will be replaced after culvert installation and the soil will receive final reclamation seed treatment (Section 2.3.1.1, p. 18). The application states that topsoil salvage will be directed by a construction supervisor or trained representative. As built volumes of topsoil salvaged and stored will be reported in an as-built addendum (Section 2.3.1.1, p. 18).

Sec. 2.3.1.4 of the MRP describes the construction ,modification, use and maintenance of topsoil storage piles. The information states that the stockpiles will be placed on a stable site, and protected by vegetation (seed mix minus shrubs and trees) and by a silt fence below the topsoil stockpile. The overflow pond stockpile is shown on Plate 7-4A. This map has 5 ft contours and the location of the topsoil stockpile will be on an existing 4h:1v slope. The stockpile will have an outslope that rises 52 ft.horizontal :20 ft. vertical or 2:1 slope at the steepest face, which is also the south face. The overflow pond stockpile will be protected with a berm and silt fencing (Sec. 7.4.2.1). The design installation for the berm's spillway is presented on Plate 7-5C. As built volumes and construction details are requested.

Findings:

The information provided in the MRP meets the topsoil/subsoil operation requirements of the Regulations or the commitments stated in the MRP.

RECOMMENDATIONS:

The application should be approved.